



U.S. Department
of Transportation
Federal Aviation
Administration

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Semiannual Report to Congress on the Effectiveness of The Civil Aviation Security Program

January 1, 1988 - June 30, 1988

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Washington, D.C. 20591

November 1988

Report of the Administrator
of the Federal Aviation Administration
to the United States Congress
pursuant to Section 315(a)
of the Federal Aviation Act
of 1958

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16. Abstract The report includes an analysis of the current threat against civil aviation along with information regarding hijacking attempts, security incidents, bomb threats, and passenger screening activity. It also summarizes ongoing activities to assure adequate protection of civil air commerce against hijacking/sabotage and related crimes, and other aspects of the Civil Aviation Security Program.			
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US Department
of Transportation

Federal Aviation
Administration

DEC 22 1988

Office of the Administrator

800 Independence Ave S W
Washington DC 20591

The Honorable George Bush
President of the Senate
Washington, DC 20510

Dear Mr. President:

I am forwarding the Federal Aviation Administration's (FAA) Semiannual Report to Congress on the Effectiveness of the Civil Aviation Security Program. It covers the period January 1, 1988, through June 30, 1988, and is submitted in accordance with section 315(a) of the Federal Aviation Act of 1958, as amended.

During this reporting period, there were no hijackings of scheduled U.S. air carriers. However, there were eight hijackings of foreign air carriers. These recent hijackings, although not involving U.S. air carriers, provide evidence of the continuing criminal and terrorist threat to aviation on a worldwide scale.

We continued to assign Federal Air Marshal teams to U.S. air carriers on selected flights operating in especially sensitive or threatened areas throughout the world. During this reporting period, Federal Air Marshals flew over 4,250,000 nautical miles during these missions. Civil aviation security special agents also conducted 95 assessments of foreign airports pursuant to the International Security and Development Cooperation Act of 1985 (Public Law 99-83). Furthermore, the FAA has continued its implementation and oversight of the recommendations of the Secretary's Safety Review Task Force that are designed to improve domestic aviation security policies and practices.

While the civil aviation security procedures presently in effect worldwide have been highly successful, the FAA will continue to monitor aviation security practices closely and modify, as necessary, those aspects of the system critical to the protection of U.S. citizens traveling in air commerce.



This report has also been sent to the Speaker of the House.

Sincerely,

T. Allan McArtor
Administrator

Enclosure

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of Transportation

Federal Aviation
Administration

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800 Independence Ave. S.W.
Washington, D.C. 20591

DEC 22 1988

The Honorable Jim Wright
Speaker of the House of Representatives
Washington, DC 20515

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Administrator

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I. EXECUTIVE HIGHLIGHTS

1. THIS REPORT COVERS THE PERIOD JANUARY 1, 1988 - JUNE 30, 1988.
2. OVER 531 MILLION PERSONS WERE PROCESSED THROUGH U.S. PASSENGER CHECKPOINTS. THERE WERE 1,291 FIREARMS AND 8 EXPLOSIVE/INCENDIARY DEVICES DETECTED WITH 679 RELATED ARRESTS.
3. WORLDWIDE, EIGHT HIJACKINGS OCCURRED AGAINST SCHEDULED AIR CARRIERS. NONE OF THESE INVOLVED U.S. AIRLINES.
4. A TOTAL OF 2,453 INVESTIGATIONS OF ALLEGED SECURITY VIOLATIONS BY AIR CARRIERS, AIRPORTS, AND INDIVIDUALS WERE COMPLETED.
5. CIVIL PENALTIES TOTALING \$333,493 WERE ASSESSED IN 516 OF THE INVESTIGATIONS.
6. THERE WERE 95 ASSESSMENTS COMPLETED OF THE EFFECTIVENESS OF SECURITY MEASURES IMPLEMENTED AT FOREIGN AIRPORTS.
7. PUBLIC LAW 100-223 INCREASING AIR CARRIER CIVIL PENALTIES TO \$10,000 WAS SIGNED ON DECEMBER 30, 1987.
8. MEETINGS WITH THE INTERNATIONAL AVIATION COMMUNITY WERE HELD TO PLAN FOR SECURITY OF THE 1988 SUMMER OLYMPICS.
9. FEDERAL AIR MARSHAL TEAMS FLEW 4,250,000 NAUTICAL MILES IN IDENTIFIED SENSITIVE AREAS OF THE WORLD.

II. INTRODUCTION

This 28th Semiannual Report to Congress on the Effectiveness of the Civil Aviation Security Program is submitted pursuant to section 315(a) of the Federal Aviation Act of 1958, as amended. This section requires that a semiannual report be submitted to the Congress concerning the effectiveness of air carrier passenger screening procedures. This report covers the period January 1, 1988 - June 30, 1988.

The report presents a concise picture of the nationwide effectiveness of the procedures used to screen passengers and their carry-on items prior to boarding scheduled and public charter flights, as well as visitors desiring access to air terminal passenger boarding areas. Included in this report is a summary of the assessments conducted by the Federal Aviation Administration's (FAA) Office of Civil Aviation Security to determine the effectiveness of the security measures at foreign airports served by U.S. air carriers, foreign airports from which foreign air carriers serve the United States, foreign airports which pose a high risk to international air travel, and such other foreign airports as the Secretary of Transportation may deem appropriate. These assessments were conducted pursuant to the International Security and Development Cooperation Act of 1985 (Public Law 99-83) which amended section 1115 of the Federal Aviation Act of 1958, as amended.

In addition, this report includes a summary of the activities of the Federal Air Marshal (FAM) Program and the changes in security measures which were instituted during this reporting period to prevent or deter terrorist and other criminal acts against civil aviation. Intensive basic and recurrent in-service training of those special agents in FAM duties by the Federal Law Enforcement Training Center, U.S. Department of the Treasury, continues to assure ~~that these special agents~~ maintain a high level of proficiency in the skills critical to performance of their highly specialized duties.

Additional information is included on the FAA's K-9 Explosives Detection Team and Aviation Explosives Security Programs, the Hazardous Materials Compliance and Enforcement Program, and the international technical assistance program.

III. AIRCRAFT HIJACKING INCIDENTS

The FAA issues operating certificates to U.S. citizens or corporations which are engaged in public charter and/or scheduled passenger air operations. A person or corporation engaged in such air operations is referred to as a "certificate holder." In the report, such certificate holders are referred to as air carriers in order to differentiate them and their aircraft from general aviation operators and aircraft.

Between January 1 and June 30, 1988, there were no hijackings of U.S. scheduled air carriers. In fact, there has not been a hijacking of a U.S. air carrier since June 1987. However, a male was arrested on March 4, 1988, at the Delta passenger screening checkpoint of the Hartsfield Atlanta International Airport after setting off the metal detector and refusing the request of the police officer to submit to a search. He was found to be armed with a .25 caliber pistol. He was taken to the Atlanta Police Airport Precinct for questioning by the Federal Bureau of Investigation. This has been documented as a possible prevented hijacking. The last terrorist hijacking of a U.S. air carrier occurred on September 5, 1986, when Pan Am Flight 73 was hijacked in Karachi, Pakistan. During this current reporting period, there were eight hijackings of foreign air carriers. This demonstrates the vulnerability and continuing threat posed to civil aviation by terrorist hijackers.

Of the eight hijackings of foreign air carriers conducted during this reporting period, the hijacking of the Kuwait Airways Flight 422 was a well-planned and coordinated attack apparently carried out by an international terrorist group. Such attacks by international terrorist organizations continue to plague many nations of the world. The commercial, diplomatic, and military interests of the United States continue to be a primary target of many such attacks.

Kuwait Airways Flight 422 was hijacked on April 5, 1988, while on a scheduled flight between Bangkok, Thailand, and Kuwait City, Kuwait. The hijackers who boarded the flight in Bangkok commandeered the aircraft and ordered it flown to Mashad, Iran. In Mashad, 57 passengers were released and the aircraft was refueled. On April 8, the aircraft was flown to Beirut, Lebanon; however, Syrian troops who control Beirut International Airport refused to allow it to land. The aircraft subsequently landed at Larnaca, Cyprus. While in Larnaca, the hijackers killed two Kuwaiti passengers after two refueling deadlines had passed. Later, after negotiations, the hijackers released 12 passengers. On April 13, the aircraft was refueled and flown to Algiers, Algeria. During the early morning hours of April 20, the hijackers, under terms reached with the Algerian Government, were allowed to leave the aircraft without being taken into custody. Their current whereabouts is unknown. The remaining hostages were free to leave.

Throughout the hijacking of Kuwait Airways Flight 422, the hijackers demanded the release of 17 Dawa Party members jailed in Kuwait for their involvement in the bombing of Kuwaiti Government facilities and the French and U.S. embassies in Kuwait during 1983. The Dawa Party is an Iraqi extremist Shiite Muslim organization which supports the current Government of Iran.

The seven other hijackings of foreign air carriers involved Aeromexico on January 4; Air Tanzania on February 13; China Airlines on February 22; Aeroflot on March 8; Pakistan International Airlines on March 12; Civil Aviation Administration of China (CAAC) Xiamen Airline Company on May 12; and an Avianca, National Airlines of Colombia airliner on May 23, 1988. Unlike the Kuwait Airways hijacking, these hijackings occurred on flights within the air carrier's country and were carried out by individuals not believed to be associated with terrorist organizations. Of these seven hijackings, the hijacking of Aeroflot Flight 3739 on March 8 received the most media coverage. This hijacking was carried out by a family of jazz musicians who hid weapons in their instrument cases to get them on the aircraft. The family, according to press reports, hijacked the aircraft in order to be flown to London, England; however, the aircraft landed at a military airfield outside Leningrad. Soviet authorities subsequently stormed the aircraft and ended the hijacking. This interdiction resulted in the death of five hijackers, three passengers, and a flight attendant.

Although there were no hijackings or attempted hijackings of U.S. air carriers during the reporting period, hijackings conducted in other countries continue to demonstrate the vulnerability of civil aviation aircraft. Even though eight hijackings of foreign carriers occurred, that small number still tends to provide support to the belief that security awareness and enhanced security measures have had an effect in deterring hijackings and possibly other crimes directed against civil aviation.

(See Exhibits 1, 2, 3, 4,)

IV. BASIC POLICIES

Operating on the concept of shared responsibilities among air carriers; airports; Federal, State, and local governments; and the airline passengers, the U.S. Civil Aviation Security Program has continued to be highly effective in preventing aircraft hijackings and other criminal acts against civil aviation. The spirit of cooperation, which characterizes their mutually beneficial working relationships, has been very helpful in making the system work well. To assure safe air travel, the FAA establishes and enforces regulations, policies, and procedures; provides highly trained professional Federal Air Marshals for in-flight security on U.S. airlines operating in sensitive areas of the world; and, in general, provides overall guidance for the safety of passengers, baggage, and cargo in their care, as well as the safeguarding of their aircraft. Similarly, airport operators are responsible for maintaining a secure ground environment and for providing local law enforcement support for airline and airport security measures. Finally, the passengers, the ultimate beneficiaries of the security program, pay for the costs of the program through security charges included in airline ticket prices.

(See Exhibit 5)

V. PASSENGER SCREENING - SCOPE AND EFFECTIVENESS

Mandatory security screening procedures, which include inspection of all passengers and their carry-on items, have been in effect since 1973. Since the initiation of these security measures, over 9 billion persons have been screened and over 9.9 billion carry-on items have been inspected. This has resulted in the detection of over 40,200 firearms and nearly 19,000 related arrests.

The FAA continually monitors and evaluates the preboard passenger screening process by attempting to carry test objects through screening points. During this period, 3,408 such tests were conducted. Also during this period, a new test object was developed to evaluate X-ray screening effectiveness.

Passenger screening is carried out to detect and prevent the carriage of firearms, explosives, incendiaries, and other deadly or dangerous weapons aboard air carrier aircraft. The FAA's analysis of screening checkpoint activity includes the recording and study of the number of items detected and the number of false threats received, as well as related information concerning individuals arrested. Results of U.S. screening activities for the first six months of 1988 are detailed as follows:

Over 531 million passengers were processed through screening checkpoints at 409 airports. A total of 1,291 firearms were detected during this reporting period. X-ray inspection resulted in the detection of 1,222 firearms in carry-on items, 33 firearms were detected by use of metal detectors, and 36 were detected as a result of physical searches. In addition, there were eight explosive/incendiary devices discovered during this period. Six of these were discovered by X-ray inspection, one by physical search, and one by metal detector. There were 679 persons arrested at screening points for the unauthorized carriage of firearms or explosive/incendiary devices.

In addition to criminal action taken by Federal and local authorities, individuals who, without proper authorization, attempt to carry firearms or explosives/incendiaries through screening checkpoints also may be subject to civil penalties imposed by the FAA. This is described in more detail in section VI.

(See Exhibits 6 and 7)

VI. COMPLIANCE AND ENFORCEMENT

Federal Aviation Regulations (FAR) require the adoption and implementation of security programs by airports and air carriers. These security programs contain security procedures which are designed to prevent or deter aircraft hijacking, sabotage, and related criminal acts. The security procedures are under constant review by the FAA and the aviation industry to ensure the procedures are effective in countering the everchanging threat to U.S. civil aviation.

There are 119 U.S. scheduled and public charter air carriers of various sizes that are required to adopt FAA-approved security programs. Each of these U.S. air carriers has adopted the Air Carrier Standard Security Program (ACSSP), which was developed by the FAA in consultation with the industry. This program requires each air carrier to implement the same standard security procedures. The FAA has authority to amend the ACSSP unilaterally when the safety and the public interest are determined to be at risk.

There are 111 foreign scheduled and public charter air carriers that serve airports within the United States. Although foreign air carriers are also required to adopt and use security programs, U.S. regulations do not currently require a foreign air carrier to submit its security program to the FAA for approval. A notice of proposed rulemaking (NPRM) was issued proposing amendment of Part 129 of the FAR to require foreign air carriers operating from the United States to submit a written security program to the FAA for acceptance by the Administrator. The comment period closed on November 7, 1988.

The 230 domestic and foreign scheduled and public charter air carriers serve 402 airports within the United States. Each of these airports is required to adopt and use a security program which provides a secure operating environment for these air carriers. Airport security programs are designed to meet the threat to the specific airport. Of the 402 airports, 17, based on current criteria, have been determined to have a need for increased security oversight and implementation of special security requirements. FAA headquarters maintains and reviews the security program of each of these 17 airports to ensure that a high level of security is maintained.

To improve the development of national guidance and policy concerning implementation of security requirements, significant airport activity reports and air carrier performance reports are periodically provided to the Office of Civil Aviation Security by FAA regional security divisions. The information contained in these reports assists in determining if identified problems are specific to a particular airport or air carrier or are generic in nature.

The FAA makes every effort to foster an atmosphere of voluntary compliance to ensure that personnel of the air carriers, airports, and other organizations properly comply with the FAR and applicable security programs. FAA civil aviation security special agents inspected the aviation industry's security operations on a regularly scheduled basis at unscheduled intervals. During these inspections, weaknesses and deficiencies are corrected and security violations are identified. The FAA works with the industry to correct such weaknesses and takes enforcement actions on violations.

To ensure the safety and security of the traveling public, all alleged and apparent violations of security requirements are investigated and appropriate actions are taken. These actions may take the form of administrative actions (warnings or letters of correction), civil penalties, or criminal prosecution. Public Law 100-223 changed air carrier penalties to a maximum of \$10,000 for each violation of certain titles of the Federal Aviation Act that occurred after December 30, 1987.

During the period January 1 through June 30, 1988, 2,453 investigations of alleged security violations by U.S. and foreign air carriers, airports, and individuals were closed. In 516 of the cases, civil penalties totaling \$333,493 were collected. In 1,659 cases, administrative actions were taken. Alleged violations were not substantiated in 278 other cases.

(See Exhibit 8)

VII. ASSESSMENTS OF SECURITY MEASURES MAINTAINED
AT FOREIGN AIRPORTS

Public Law 99-83, the International Security and Development Cooperation Act of 1985, was enacted on August 8, 1985. Title V, Part B of the Act amends section 1115 of the Federal Aviation Act of 1958 and directs the Secretary of Transportation to assess the effectiveness of security measures at those foreign airports being served by U.S. air carriers, those foreign airports from which foreign air carriers serve the United States, those foreign airports which pose a high risk of introducing danger to international travel, and at such other airports as the Secretary may deem appropriate. The Act requires that specific action be taken regarding airports which do not maintain and administer effective security measures.

The Secretary has delegated the responsibility for the implementation of certain legislative requirements in Public Law 99-83 to the FAA. These include the assessment of security measures at foreign airports and consultations with the Secretary of State concerning threats to U.S. citizens traveling abroad.

At present, there are nearly 200 foreign airports which meet the assessment requirements of Public Law 99-83. This number fluctuates as changes in air carrier service take place at these airports. During 1987, the FAA conducted a total of 246 foreign airport assessments. As of June 30, 95 such assessments have been conducted. Some slight changes in the number of these assessments take place each year because of an ongoing indepth analysis of all foreign airports subject to assessment and the resulting refocusing of resources at those locations where experience and other available information in threat analyses indicate that less frequent visits would still ensure compliance with International Civil Aviation Organization (ICAO) Standards and appropriate Recommended Practices.

Assessments consist of an indepth analysis of the security measures at the airports visited, using a standard which is based, at a minimum, on the Standards and appropriate Recommended Practices contained in Annex 17 to the Convention on International Civil Aviation. If FAA develops information indicating that an airport does not maintain and administer effective security measures, these assessments are reported to the Secretary of Transportation. Public Law 99-83 provides for notification to the foreign country involved when a determination is made by the Secretary of Transportation that a foreign airport does not maintain and administer effective security measures. Notification includes recommended steps to remedy the problem. The law also specifies when and how the public is to be notified of that determination. Public notice occurs when the foreign government fails to bring security measures up to the standard within 90 days of being notified of the Secretary of Transportation's determination. If the Secretary of Transportation at any time determines, after consultation with the Secretary of State, that a condition exists that threatens the safety or security of passengers, aircraft, or crew traveling to or from a specified airport, the Secretary of Transportation must immediately initiate the public notification procedures and, in addition, apprise the Secretary of State, who must issue a travel advisory. Under these circumstances, the Secretary of Transportation is also required to consider whether the public interest necessitates the immediate suspension of service between the United States and the specified airport.

VIII. INTERNATIONAL TECHNICAL ASSISTANCE

During the reporting period, civil aviation security representatives provided indepth security briefings at the FAA headquarters for 20 high-ranking foreign nationals representing Australia, Korea, the United Kingdom, the Federal Republic of Germany, Taiwan, Malta, and Yemen.

FAA representatives also joined the Department of State's Anti-Terrorism Assistance Program (ATAP) efforts in Tunisia, Denmark, and Malaysia and provided crisis management training to U.S. Department of State personnel assigned to posts in Paris and New Delhi.

In preparation for the Olympic games scheduled for September - October 1988, FAA senior security representatives joined with the U.S. State Department's Office of Counter-Terrorism in convening a meeting in Seoul of all concerned aviation interests. The purpose of the meeting was to finalize security procedures deemed necessary to reduce the possibility of a successful terrorist attack on civil aviation during this period of time. Plans were approved by the Government of the Republic of Korea and coordinated with representatives of various other governments for the deployment of FAA civil aviation security special agents in Seoul and at other selected foreign airports having direct flights to Seoul during the Olympics.

Also, during the reporting period, the Director of Civil Aviation Security, along with the State Department's Ambassador-At-Large for Counter-Terrorism, traveled to Cairo, Egypt, to assess the impact of a 6 million dollar U.S. Agency for International Development (USAID) sponsored aviation security project. Plans were discussed with representatives of the Government of Egypt to provide an FAA presence onsite in Cairo for technical advice and assistance during this project.

Responding to urgent requests from the Government of Liberia for onsite training of its airport security forces, FAA personnel were dispatched to Monrovia to conduct an intensive 2-week training session covering a broad range of aviation security matters. Liberian reaction to this effort, as reported by the American Ambassador, has been extremely positive.

Because of the growing importance of aviation security to the international community, the ICAO established an Aviation Security Panel in 1987. The second meeting of this panel in June 1988 resulted in the restructuring of Annex 17 into a more logical sequence and the addition of a limited number of Standards and Recommended Practices. FAA is represented on this panel and played a key role in the development of these new Standards and Recommended Practices and concurred with the proposed restructuring of Annex 17.

Civil aviation security personnel also made presentations at an ICAO aviation security seminar held in Caracas, Venezuela, and conducted a hazardous materials/security training seminar in San Jose, Costa Rica.

IX. FEDERAL AIR MARSHAL (FAM) PROGRAM ACTIVITIES

The enactment of Public Law 99-83 established an explicit statutory basis for the FAA's FAM Program. This statute provided the Secretary of Transportation with the authority to authorize (with the approval of the Attorney General and the Secretary of State) civil aviation security FAM's to carry firearms and to make arrests without warrant for any offense against the United States committed in their presence if they have reasonable grounds to believe that the person to be arrested has committed or is committing a felony.

FAM's are recruited as civil aviation security specialists (special agents) and when not on FAM missions they perform the same wide variety of aviation security functions as performed by other security specialists. However, as FAM's, they receive intensive, highly specialized law enforcement training at the Federal Law Enforcement Training Center (FLETC), followed by recurrent training every 6 months. In this reporting period, one basic class and five in-service classes were successfully concluded at the FLETC training site located at Marana, Arizona.

During this reporting period, FAM's continued to provide security coverage of selected flights operating in especially sensitive areas of the world, covering approximately 4,250,000 nautical miles. The missions, all flown with U.S. air carriers, were selected based on analysis of worldwide terrorist activities. Since civil aviation continues to represent an attractive target to terrorists, FAM's will continue this very effective countermeasure of providing in-flight security.

X. CIVIL AVIATION SECURITY INITIATIVES

The FAA continues to respond to the recommendations of the Secretary of Transportation's Safety Review Task Force concerning aviation security policies and practices at domestic airports.

Significant initiatives currently underway are as follows:

- o A Notice of Proposed Rulemaking (Notice No. 88-6) entitled "Access to Secured Areas of Airports" was issued by the FAA on March 11, 1988 (53 FR 9094; March 18, 1988). The notice proposed a requirement that certain airport operators install a computer-controlled access system for the air operations area of airports. In addition, the notice also proposed alternative systems that would provide an equivalent level of security. Comments have been received and are being reviewed.
- o The FAA has funded a contractual effort to produce a five-part video presentation entitled, "Airport Security - A Team Approach." The videos will be shown to all categories of persons employed at airports and will stress the importance of understanding their roles in airport security.
- o The FAA continues an aggressive program to ensure air carrier improvement of passenger screening to meet the FAA established detection standard of 100 percent for detection of passenger screening test objects. Enforcement action continues to be taken against air carriers each time a screener fails to detect a test object during an FAA test.
- o Ten major domestic airports were inspected pursuant to the Civil Aviation Security National Airport Inspection Program.

XI. FAA K-9 EXPLOSIVES DETECTION TEAM PROGRAM

The FAA K-9 Explosives Detection Team Program was implemented in 1972. Currently, there are 32 local law enforcement organizations participating in this program. Each jurisdiction must agree to establish two teams in order to participate. The FAA will support up to five teams (each team consists of one dog and one handler) for each participating organization.

The Air Force, through a reimbursable agreement with the FAA, provides initial training at Lackland Air Force Base, Texas, as well as follow-on evaluations, and refresher training for civilian law enforcement officers and K-9 dogs in patrol techniques and detection of explosives.

All teams assigned to this program must be familiar with aircraft and automobile searches, baggage and related containers, and air operations area. Participants in this program can be dispatched to any location throughout the world where this type of specialized aviation explosives detection technical assistance is required. Every team is evaluated at least once a year and must recertify or return to Lackland for additional training.

The Explosives Detection K-9 Team Program continues to serve as a major defense against one of the main threats to safety in air travel, that of explosives and improvised explosive devices.

(See Exhibits 9 and 10)

XII. AVIATION EXPLOSIVES SECURITY

During this reporting period, the Government of the Republic of Korea published and distributed a booklet entitled "Investigation Findings--Explosion of Korean Air Flight 858." This booklet is their account of what they believe caused the crash of Korean Air (KAL) Flight 858 in the Andaman Sea off the coast of Burma on November 29, 1987. It is based on the testimony of one of the two terrorists allegedly involved in the plot who was apprehended. Since the "bomb" described by this criminal was of a rather radical design not encountered previously, there was some doubt as to the validity of this testimony. However, the fact that a commercial airliner with 115 persons aboard disappeared from radar contact without any report of problems demanded that the feasibility of the reported improvised explosive device (IED) (bomb) be proven.

Using the technical data included in this report, the FAA conducted a test using an IED believed to be similar to the device described by the captured terrorist. The device was detonated in the same model Boeing 707 aircraft as that operated by KAL for Flight 858. The aircraft was set up to simulate the in-flight conditions of that flight at the time it disappeared from radar surveillance. Analysis of test results supports the possibility that an IED device was used to destroy KAL 858. In addition, a preliminary analysis of the damage caused by the detonation of this device indicates that it was probably sufficient to cause instantaneous loss of aircraft to ground communications as well as loss of aerodynamic control of the aircraft.

(See Exhibit 11)

XIII. RESEARCH AND DEVELOPMENT

Since the inception of its security Research and Development Program in 1976, the FAA has focused its efforts on the development of automated detection equipment to screen passengers, baggage, and cargo for concealed deadly or dangerous weapons and explosives. This remains a priority objective. Significant progress has been made in this area through the use of advance bulk and vapor detection techniques, but terrorists' access to newer, low vapor-pressure sheet explosives makes this problem a continuing challenge.

A review of the technologies available to detect explosives that could be carried on an aircraft by an individual quickly led to the conclusion that the explosive must be detected by the characteristic vapor or "smell" that it emits. The major challenge has been the development of sensitive devices that can collect adequate samples from low vapor-pressure explosives, yet are selective enough to distinguish explosives from background vapors commonly found in vapor detection technology. The FAA is conducting research to incorporate the vapor detector into a passenger screening portal suitable for airport use. The portal will use large amounts of air to sweep vapors from passengers into the collector.

The detection of explosives in checked baggage is a difficult problem complicated by the extraordinary variety of objects in passenger luggage and the diversity of the explosives threat. The FAA has been performing research and development on this problem for the past 10 years. Efforts have been accelerated since 1985, leading to the airport testing of two prototype thermal neutron analysis systems beginning in May 1987. Airport testing of checked baggage was performed at San Francisco and Los Angeles International Airports on a mixture of domestic and international bags. Over 40,000 pieces of checked baggage were examined and the results were very favorable. Five thermal neutron analysis systems are being purchased from facilities and equipment funds and will be installed at major international airports. All decisions relating to the detection of the explosive simulants within the luggage were made by the computer. There is no human decisionmaking or interpretation involved in the detection process.

The FAA continues to search for new concepts and technologies which will result in explosives detection systems that are more effective, less complex, and less costly than those currently under development. Given the fact that such efforts are high risk and long term, the FAA strategy under the expanded and accelerated program is to increase the number and technical quality of new concepts investigated. The FAA advertised this requirement through the procurement process in fiscal years 1985, 1986, 1987, and 1988.

Approximately 20 proposals were evaluated each year. Technologies were funded employing high-energy physics approaches to detect explosives in baggage and cargo. Also funded were several alternative vapor collection and detection techniques which promise to be more sensitive or efficient than techniques produced in earlier research and development efforts.

In the FAA's concourse security program, emphasis has been placed on screening people. In FY 1986 and FY 1987, the FAA solicited proposals to improve the operation of existing metal detector technology. The objective of this development effort was to improve hardware design and signal processing to reduce false alarms while retaining detection of the smallest handguns.

In FY 1986 and FY 1987, the FAA also issued solicitations for new detection concepts for nonmetallic weapons. Of the proposals received and evaluated, two were funded each year. Technologies proposed included infrared imaging as well as sonic and microwave technologies. Studies are ongoing to assess these technologies for detection of threat weapons, resolution, operational problems, processing speed, and potential false alarms. The FAA projects that it will have a system to conduct airport concept feasibility testing during 1990. While the FAA is developing technology to detect nonmetallic weapons, no nonmetallic weapons are reported in commercial production at this time.

There is an effort in the FAA's Research and Development Program to enhance and automate X-ray systems used in the screening of passenger carry-on items while, at the same time, several manufacturers are independently showing great innovation in extending X-ray technology to identify specific threats. Studies are underway to improve concourse X-ray system performance by concentrating on the development of automatic pattern recognition software and hardware. Integrated into current X-ray detectors, automatic pattern recognition systems would alert the operator to suspicious items in luggage and graphically highlight the threat.

In conclusion, the FAA is aggressively approaching the problem of detecting the terrorists' tools, weapons, and explosives by focusing on detecting the fundamental properties of the threat. Mature technologies, like thermal neutron analysis, are currently undergoing airport testing. Other technologies are being pursued in anticipation of potential threats such as the nonmetallic handgun. The goal of the FAA research program is to develop technology to fit into a total security system to deter and defeat threats against air transportation.

XIV. HAZARDOUS MATERIALS COMPLIANCE AND ENFORCEMENT PROGRAM

Within the FAA, hazardous materials (HM) inspections/surveillance activities are conducted by civil aviation security inspectors in conjunction with regularly scheduled security inspections of air carriers and airports. At a minimum, inspections are conducted of all air carriers, both U.S. and foreign, when it is determined that the air carrier (passenger or cargo) regularly accepts and transports or handles HM. These inspections are conducted based on a review and analysis of prior HM shipments, incident experience, identified or anticipated problem areas, and a history of violations.

In order to determine compliance effectiveness and ensure that freight forwarders and shippers meet their basic responsibilities in the shipment of HM by air, the FAA is continuing inspection efforts at major air carrier facilities at major airports. These locations are considered collection points for shipments originating from many freight forwarders and shippers. When problems exist with a particular company, assistance can be directed to the particular problem areas concerned.

Ever-increasing amounts of regulated commodities are now being shipped by air daily. It is estimated that from 3 to 4 percent of all cargo shipped by air is classed as HM. During the past year, increased emphasis has been directed to the HM compliance and enforcement program.

During the reporting period, two basic and two recurrent classes in air transportation of HM were conducted at the Mike Monroney Aeronautical Center, Oklahoma City, Oklahoma. Thirty-seven new civil aviation security special agents received basic training and 27 others received in-service recurrent training in air transportation of HM.

The FAA has evaluated 33 Department of Transportation (DOT) proposed exemptions affecting the transportation of HM by air and reviewed an additional 14 requests for emergency exemptions. Civil aviation security special agents participated in seven Flight Standards National Aviation Inspection Program (NASIP) inspections for the purpose of determining air carrier compliance with regulations governing air transportation of HM.

During this period, evaluations were conducted in two regions of a new and improved HM inspection/surveillance/activity data computer system. Results of these evaluations are now being reviewed, and it is expected that the new system will be operational in the first quarter of FY-89.

(See Exhibit 12)

XV. OUTLOOK

The worldwide terrorist threat to civil aviation persists in the form of threats to U.S. citizens. American interests also continue to be targeted by terrorist organizations and those countries supporting international terrorist activities. Civil aviation will continue to represent a very tempting target to criminals and terrorists because of its high visibility. As evidence of a continuing threat to this industry, so vital to the world economy, most governments recognize that increased security efforts must be taken to provide a safer and more secure air transportation system. The recurring assessments of security measures implemented at foreign airports assist foreign airport authorities in improving and maintaining the overall security posture of their international airports.

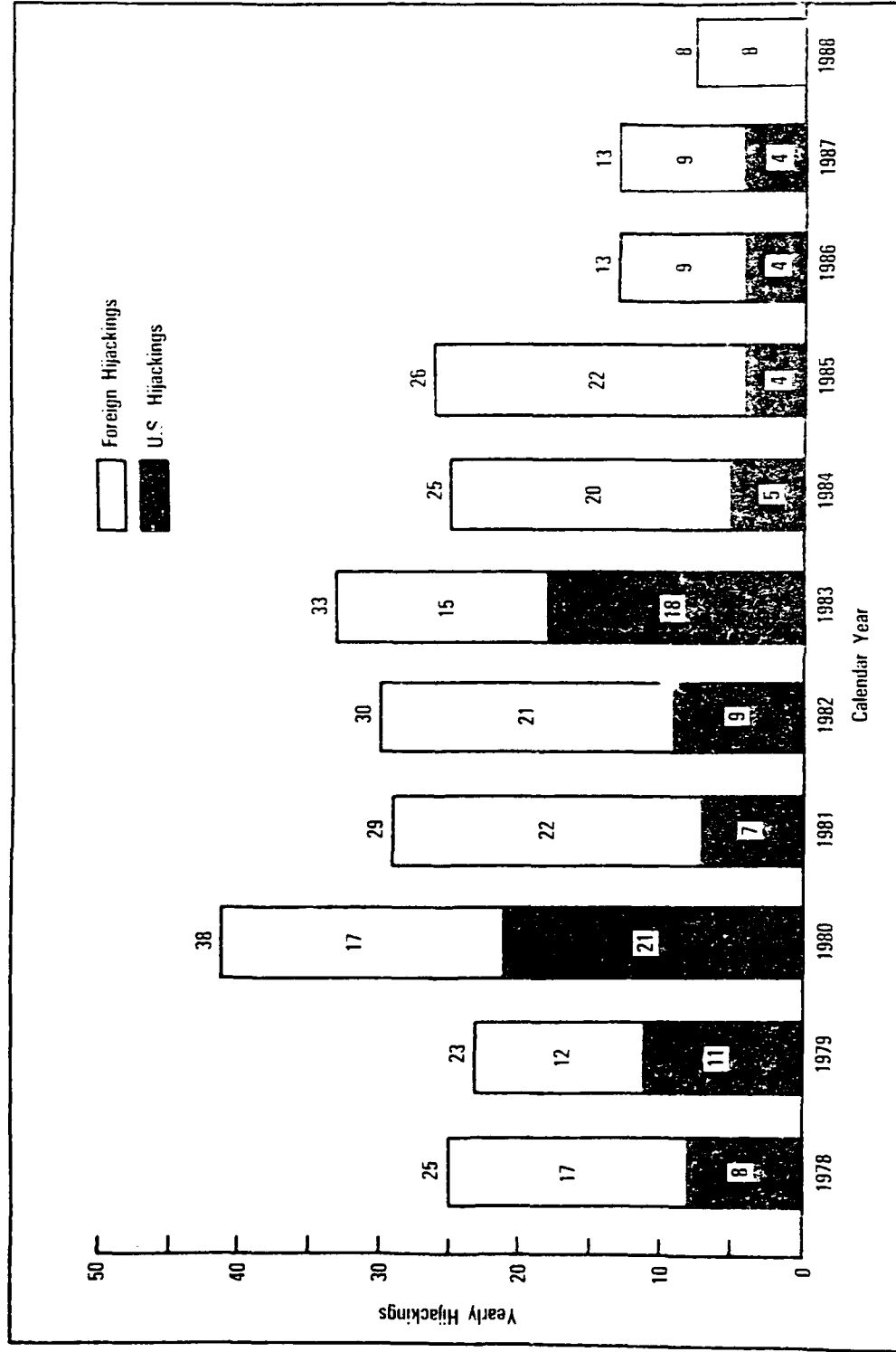
In the United States, joint initiatives have been undertaken with the aviation industry and airport operators to implement the recommendations of the Secretary of Transportation's Safety Review Task Force with special emphasis on improved monitoring of security procedures at major U.S. airports. Efforts will continue in the review, testing, and evaluation of the airport contingency plan through hijack exercises throughout the United States and in the research and development efforts to improve technical equipment utilized in passenger and baggage screening. The FAA will continue its efforts to support the efficient, reliable, safe, and secure flow of people and property through the system.



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U.S. and Foreign Air Carrier Aircraft Hijackings

(Detailing the Period January 1, 1978-June 30, 1988)



U.S. and Foreign Air Carrier Aircraft Hijacking Summaries

(January 1-June 30, 1988)

U.S.

Date	Airline Flt/ Aircraft	Number Aboard	Boarding Point	Destination/Objective	Remarks

Foreign

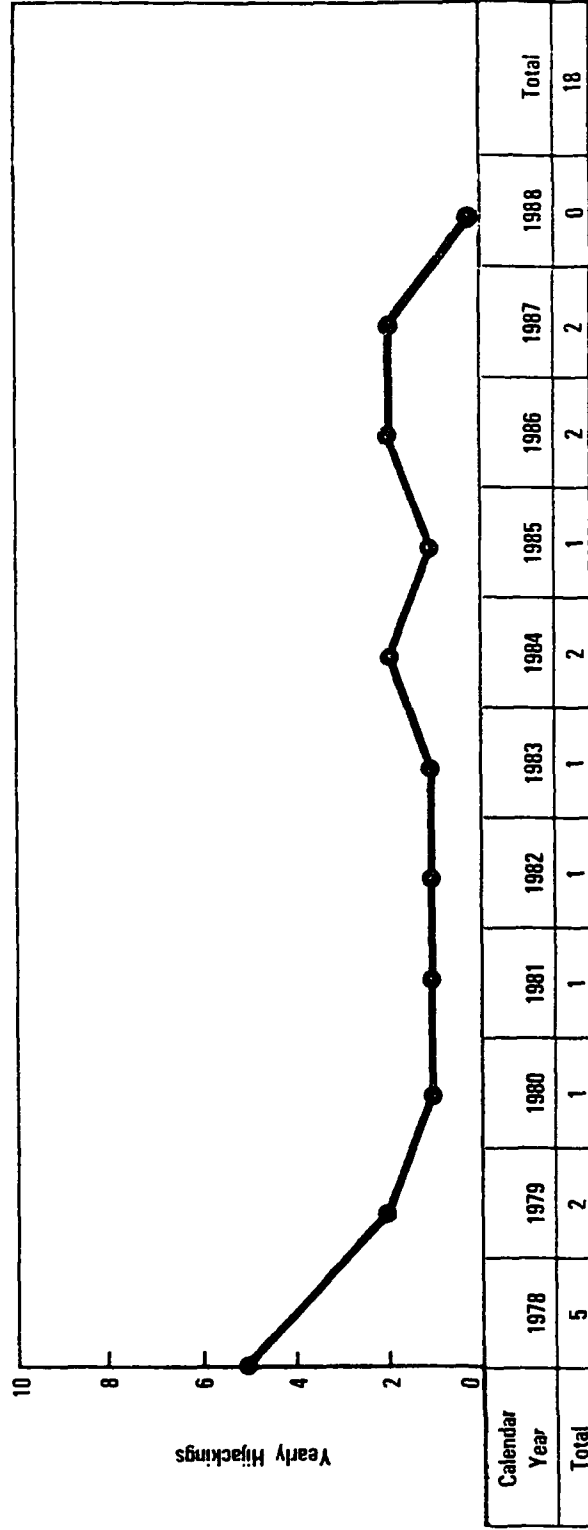
Date	Airline Flight	Number Aboard	Boarding Point	Destination/Objective	Remarks
1/4/88	Aeromexico Flight 179	119	Juarez, Mexico	Brownsville, Texas	Surrendered to Crew
2/13/88	Air Tanzania	76	Dar Es Salaam, Tanzania	London, United Kingdom	Four Hijackers Taken Into Custody
2/22/88	China Airlines	114	Taipei, ROC	Beijing, PRC/To Promote the Peaceful Reunification of China	Hijacker Overpowered by Crew Members
3/8/88	Aeroflot	83	Irkutsk, USSR	Flee the Soviet Union	Ended When Soviet Officials Assaulted Aircraft
3/12/88	Pakistan International Airlines	156	Karachi, Pakistan	Unknown	Subdued by Crew and Passenger
4/5/88	Kuwait Airways Flight 422	112	Bangkok, Thailand	Free 17 Dawa Party Members Incarcerated in Kuwait	Hijackers Left Aircraft Without Being Taken Into Custody in Algiers on April 20, 1988
5/12/88	CAAC Xiamen Airways	118	Xiamen, PRC	Flee PRC	Hijackers Taken Into Custody in ROC
5/23/88	Avianca	134	Medellin, Colombia	Extortion	Hijacker Captured After Fleeing Aircraft



U.S. Department
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U.S. General Aviation Aircraft Hijackings

(Detailing the Period January 1, 1978-June 30, 1988)

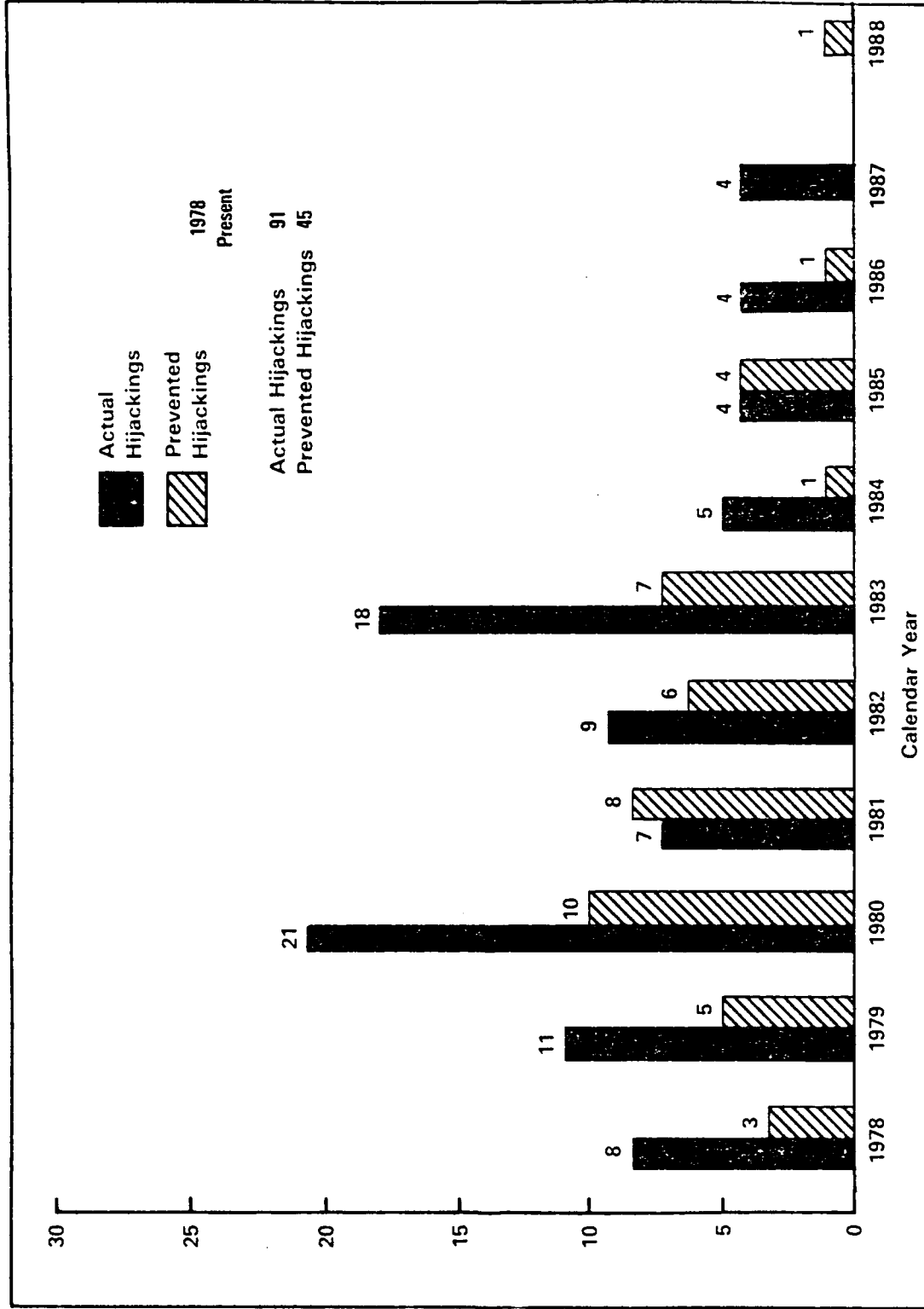




US Department
of Transportation
**Federal Aviation
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Actual Hijackings & Prevented Hijackings of U.S. Air Carrier Aircraft

(Detailing the Period January 1, 1978-June 30, 1988)



PREVENTED HIJACKINGS: Incidents in Which It Appeared the
Individuals Involved Intended to Hijack an Aircraft but
Were Prevented From Doing So by Security Procedures.



U.S. Department
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Civil Aviation Security Basic Policies

<u>Program Element</u>	<u>Responsibility</u>	<u>Actions</u>
Air Carriers	Secure Travel	<ul style="list-style-type: none">• Maintain Responsive Security Programs• Screen Passengers, Carry-on Items• Secure Baggage, Cargo Procedures• Protect Aircraft
Airports	Secure Operating Environment	<ul style="list-style-type: none">• Maintain Responsive Security Programs• Protect Air Operations Area• Provide Law Enforcement Support
FAA	Leadership	<ul style="list-style-type: none">• Identify and Analyze Threat• Prescribe Security Requirements• Coordinate Security Operations• Provide Technical Assistance• Enforce Regulations
Users	Program Costs	<ul style="list-style-type: none">• Security Funded as Operating Cost of System



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Civil Aviation Security Scope and Effectiveness 1973-1988

- Over 9.5 Billion Persons Screened
- Over 10 Billion Pieces of Carry-on Items Inspected
- Over 41,400 Firearms Detected
- Nearly 19,000 Related Arrests
- 118 Hijackings or Related Crimes May Have Been Prevented by Airline and Airport Security Measures



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Civil Aviation Security Airline Passenger Screening Results January 1981 - June 1988

	1981		1982		1983		1984		1985		1986		1987		1988	
	Jan-June	July-Dec	Jan-June	July-Dec	Jan-June	July-Dec	Jan-June	July-Dec	Jan-June	July-Dec	Jan-June	July-Dec	Jan-June	July-Dec	Jan-June	July-Dec
Persons Screened (Millions)	294.4	304.1	319.5	310.7	313.9	395.2	367.4	408.2	481.1	511.8	550.3	505.0	548.7	546.9	531.2	
Weapons Detected																
Firearms	971	1284	1286	1390	1363	1421	1325	1632	1448	1539	1525	1716	1645	1607	1291	
(1) Handguns	915	1209	1243	1316	1303	1331	1265	1501	1385	1438	1415	1566	1519	1493	1228	
(2) Long Guns	7	37	16	41	22	45	31	69	38	52	49	97	48	51	18	
(3) Other	49	38	27	33	38	45	29	62	25	49	61	53	78	63	47	
Explosive/Incendiary Devices	8	3	0	1	4	0	4	2	5	7	4	7	5	9	8	
Persons Arrested																
For Carriage of Firearms/ Explosives	534	653	651	663	633	649	565	720	602	708	645	770	734	847	679	
For Giving False Information	34	15	21	6	7	27	6	21	17	25	64	25	44	37	123	

Source: Reports of Passenger Screening Activities at U.S. Airports

Exhibit 7

As of: 6-30-88

Civil Aviation Security Compliance and Enforcement Actions

	1973 Through 1981	1982	1983	1984	1985	1986	1987	1988
U.S. AIR CARRIERS								
Warnings	2,043	164	231	191	426	439	489	641
Letters of Correction	1,022	98	51	104	101	156	140	61
Non Enforcement Actions	541	44	52	33	39	79	107	132
Civil Penalties (Amount)	423 (\$434,197)	28 (\$10,508)	37 (\$26,861)	56 (\$62,300)	42 (\$105,296)	83 (\$122,221)	160 (\$340,850)	98 (\$163,119)
Investigations Closed	4,029	334	371	384	608	757	896	932
Investigations Pending	416	91	163	88	145	362	1,262	951
FOREIGN AIR CARRIERS								
Warnings	21	2	3	5	11	8	17	28
Letters of Correction	44	2	1	0	3	13	9	5
Non Enforcement Actions	29	2	2	3	4	6	5	4
Civil Penalties (Amount)	2 (\$25,000)	0	0	3 (\$6,000)	0	0	2 (\$26,000)	1 (\$1,000)
Investigations Closed	96	6	6	11	18	27	33	38
Investigations Pending	36	4	4	1	7	13	55	45
AIRPORTS								
Warnings	797	59	57	43	53	60	46	31
Letters of Correction	535	21	9	14	24	27	32	31
Non Enforcement Actions	147	9	18	16	10	22	28	7
Civil Penalties (Amount)	128 (\$96,025)	8 (\$6,300)	8 (\$7,250)	7 (\$6,750)	6 (\$10,900)	15 (\$16,950)	26 (\$28,650)	36 (\$35,750)
Investigations Closed	1,607	97	92	80	93	124	132	105
Investigations Pending	194	18	14	12	25	58	258	187
INDIVIDUALS								
Administrative Corrections	4,451	2,267	2,474	1,964	2,450	1,430	2,158	862
Non Enforcement Actions	543	161	207	173	171	238	264	135
Civil Penalties (Amount)	471 (\$32,270)	114 (\$28,095)	270 (\$84,190)	251 (\$79,429)	278 (\$80,705)	391 (\$129,292)	449 (\$183,770)	381 (\$133,624)
Investigations Closed	5,445	2,542	2,951	2,388	2,899	2,059	2,871	1,378
Investigations Pending	1,324	483	550	662	508	813	3,360	1,573

FAA Local Law Enforcement K-9 Explosive Detection Team Participants

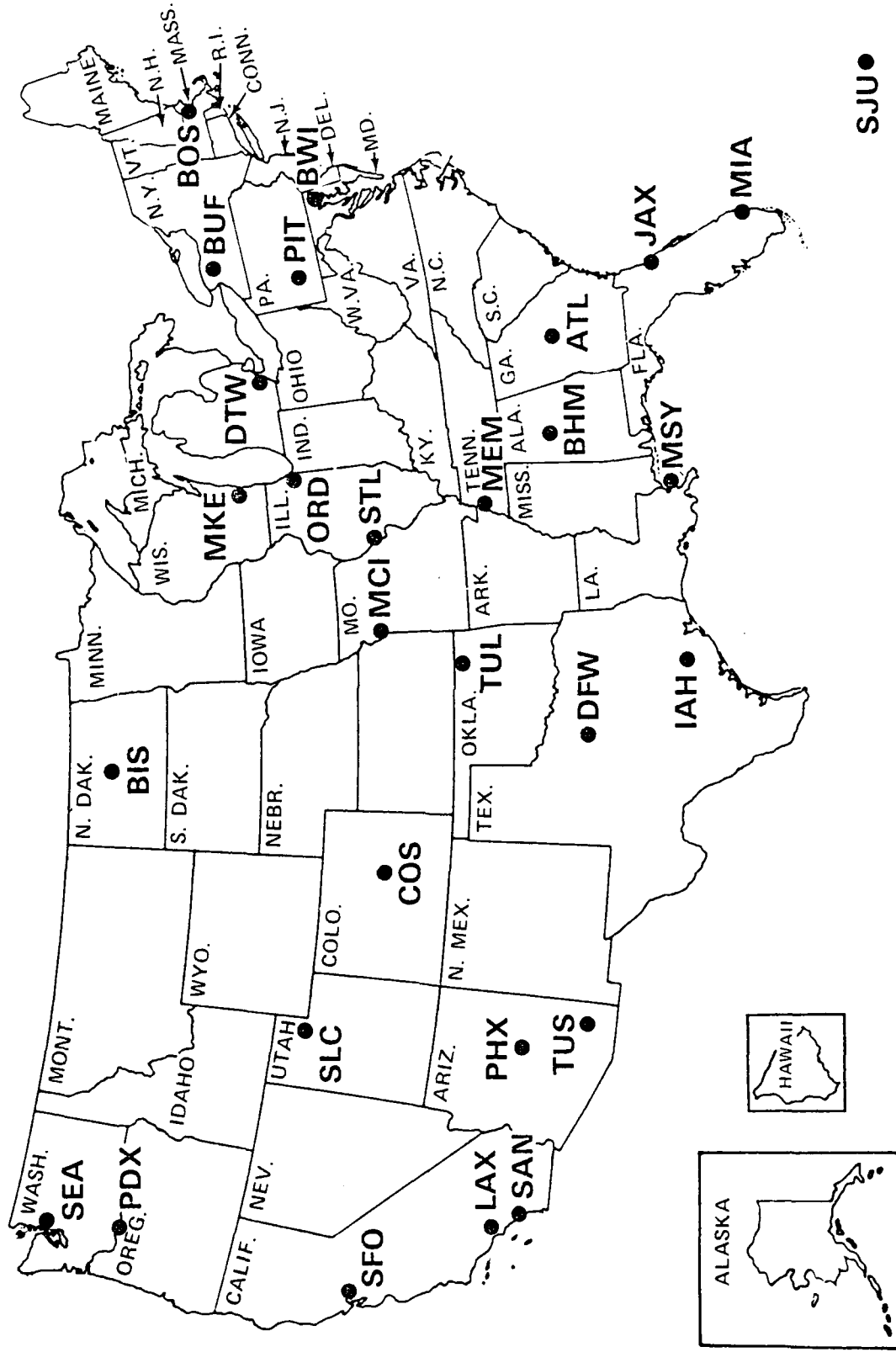
January 1, 1988-June 30, 1988

LOCATION	PARTICIPANT TEAM
ALABAMA Birmingham (BHM)	Birmingham Police Department
ARIZONA Phoenix (PHX) Tucson (TUS)	Phoenix Police Department Tucson Police Department
CALIFORNIA Los Angeles (LGB/BUR LAX Backup) Los Angeles (LAX) San Diego (SAN) San Francisco (SFO) San Francisco (SFO Backup)	Los Angeles County Sheriff's Office Los Angeles Police Department San Diego County Sheriff's Office San Francisco Airport Police Department San Mateo County Sheriff's Office
COLORADO Colorado Springs (COS)	Colorado Springs Police Department
FLORIDA Jacksonville (JAX) Miami (MIA)	Jacksonville Port Authority Metro Dade Police Department
GEORGIA Atlanta (ATL)	Atlanta Police Department
ILLINOIS Chicago (ORD)	O'Hare International Airport Security
LOUISIANA New Orleans (MSY)	Jefferson Parrish Sheriff's Office
MARYLAND Baltimore (BWI)	Maryland State Police
MASSACHUSETTS Boston (BOS)	Massachusetts State Police
MICHIGAN Detroit (DTW)	Wayne County Sheriff's Office/Airport Division

LOCATION	PARTICIPANT TEAM
MISSOURI Kansas City (MCI) St. Louis (STL)	Kansas City Police Department St. Louis Airport Police Department
NEW YORK Buffalo (BUF)	Niagara Frontier Transportation Authority Cheektowaga Police Department
NORTH DAKOTA Bismarck (BIS)	Bismarck County Police Department
OKLAHOMA Tulsa (TUL)	Tulsa Police Department
OREGON Portland (PDX)	Port of Portland Police Department
PENNSYLVANIA Pittsburgh (PIT)	Allegheny County Police Department
PUERTO RICO San Juan (SJU)	San Juan Police Department
TENNESSEE Memphis (MEM)	Memphis Police Department
TEXAS Dallas (DFW) Houston (IAH)	Dallas/Fort Worth Airport Police Department Houston Police Department
UTAH Salt Lake City (SLC)	Salt Lake City Airport Authority
WASHINGTON Seattle (SEA)	Port of Seattle Police Department
WISCONSIN Milwaukee (MKE)	Milwaukee County Sheriff's Office

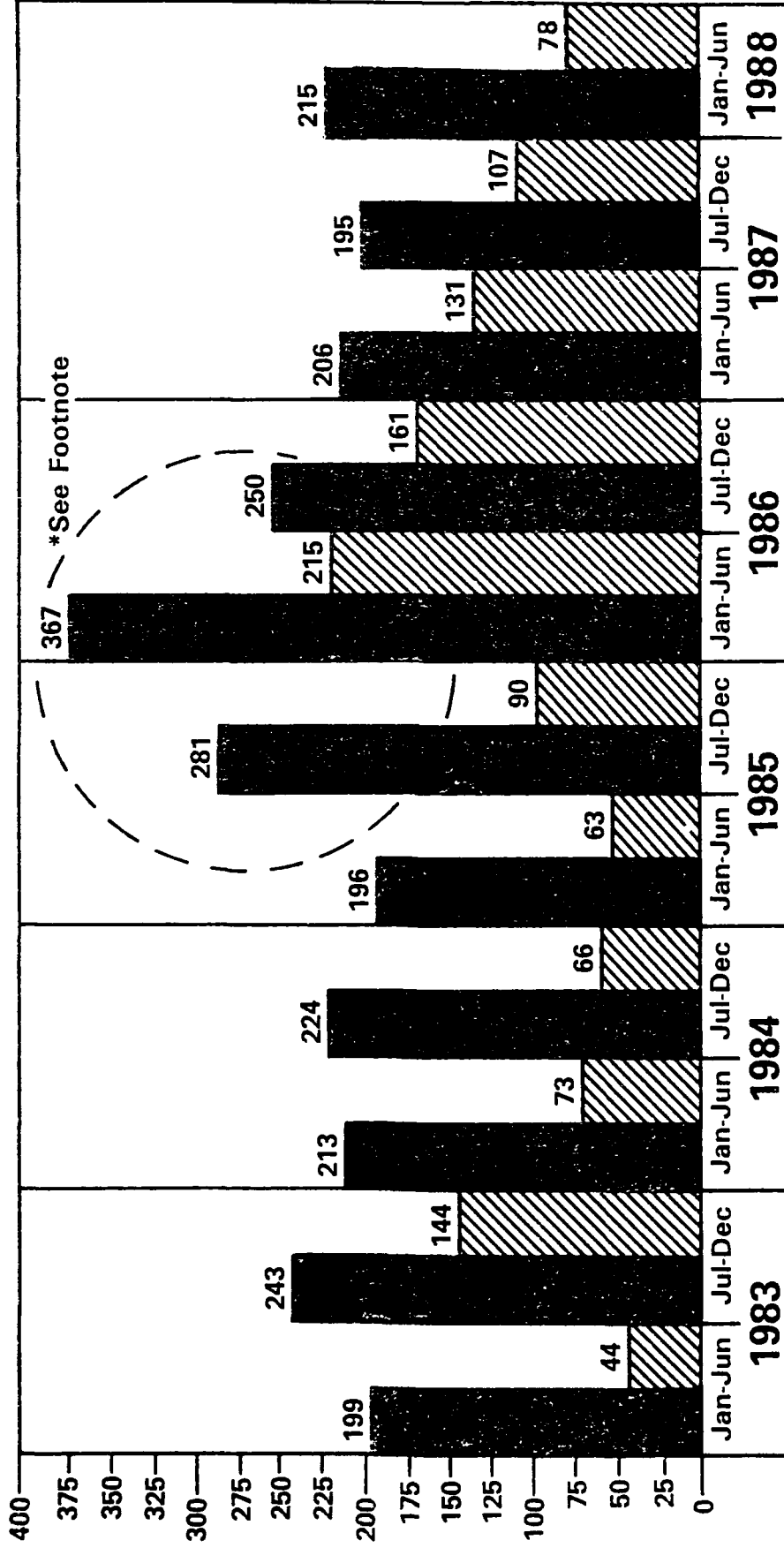
FAA SPONSORED EXPLOSIVE DETECTION K9 TEAMS

LOCATIONS



SJU●

Bomb Threats Against U.S. Aircraft and U.S. Airports 1983 Thru 1988



Key

- Threats Against Aircraft
- Threats Against Airports

*An Analysis of the Period From June 1, 1985, Through April 30, 1986, Reveals That This Statistical "Spike" May Be Attributed, in Part, to Extensive Publicity Given Aviation Explosive Incidents.

Civil Aviation Security Hazardous Materials Compliance and Enforcement Penalty Actions

	1984		1985		1986		1987		1988	
	Jan-Jun/	July-Dec	Jan-Jun/	July-Dec	Jan-Jun/	July-Dec	Jan-Jun/	July-Dec	Jan-Jun/	July-Dec
*Criminal Cases Initiated	2	0	1	0	0	0	1	0	1	1
Criminal Cases Completed	0	2	0	1	0	0	0	1	0	0
Total Fines/Years	0	6,000	0	1,000	0	0	0	5 Yrs**	0	0
Civil Penalty Cases Initiated	38	40	43	30	41	44	61	51	70	70
Civil Penalty Cases Completed	22	36	19	27	26	29	20	25	21	21
Total Fines Collected	71,200	96,735	107,600	183,500	161,100	188,950	158,200	199,400	133,500	133,500

*If Criminal Cases Cannot Be Supported by Local U.S. Attorney's, They Are Converted to Civil Penalty Cases.

**Confinement.